ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

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Dear Sir:

Rapid tax amortization of plants for primary processing of uranium ores and concentrates is now permitted under new amendment to the Internal Revenue code. To qualify under new rules issued by Office of Civil and Defense Administration, such plants must be cooperating in the USAEC's program to develop new sources of uranium ore and concentrate. Previously, fast tax write-offs had been limited to special defense items or research and development projects for the USAEC or Department of Defense. (Other BUSINESS NEWS, p. 2 this LETTER.)

Large tandem rolling mills for production rolling of nuclear fuel element plates have recently been delivered by Fenn Manufacturing Co., Newington, Conn. Installation, made by Fenn for one of the U. S.'s largest producers of nuclear fuel elements, consisted of three tandem mills for rolling fuel element plates with complete automation. The mills have integral material handling equipment which automatically convey fuel element plates between each stand. (Other MANUFACTURERS' NEWS, p. 3 this LETTER.)

Two French government suits concerning U. S. patents on nuclear reactor principles were dismissed last week in Washington under ruling of U. S. District Court there. The suits were filed by Commissariat a L'Energie Atomique, Jean Frederic Joliot-Curie, Lew Kowarski, and Jean Henri Halban. In this action, it was attempted to reinstate a 1940 claim that the plaintiffs had discovered the principle of controlled nuclear reactions in 1939; this claim had been rejected by U. S. Patent Office examiner in 1940 on the ground that application was based on abstract theory, with no working details. From 1941 to 1949 the subject was classified, but in 1950 a board of patent appeals ruled against them. Attempt to reopen the case in 1955 was refused by Patent Office on ground of abandonment. Latest ruling, made last week by the District Court, was that Federal judges have no authority to order Patent Office to reopen such a case. (Other PATENT NEWS, p. 4 this LETTER.)

Net profit of $457,129 has been earned by Faraday Uranium Mines (Canada) for the first nine months' operations this year. Equivalent to 10.4¢ per share, it was on gross revenues of $6,408,000 and gross operating profit of $2,598,000 for the period. Increase in milling rate is reflected in third quarter gross revenue of $2,418,000 as compared with second quarter gross of $2,093,000, and a corresponding increase in net profit from $103,079 in the second quarter to $331,291 in the third quarter. (Other FINANCIAL NEWS, p. 5 this LETTER.)

Design study for a new high-energy, high-intensity electron accelerator has been started at the high energy radiation laboratory of the National Bureau of Standards, Washington, D. C. The accelerator is expected to have an energy in excess of 50 mev and an electron beam power of the order of 40 kw. The design and auxiliary studies are expected to result in a detailed specification for the accelerator by the Spring of 1959. If funds are available, accelerator and building contracts will be awarded during that Summer. (Other RESEARCH PROJECTS, p. 5 this LETTER.)

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ATOMIC ENERGY BUSINESS NEWS...

INDUSTRIAL NUCLEAR ENERGY WORK BEING SURVEYED:- Concerns in the U. S. making nuclear reactors and components, fuel elements and other products, and processing radioisotopes and ores are now being surveyed by the Department of Commerce's bureau of the census. Figures being collected include number and value of shipments, and other business data and will be published as a section of the annual Census of Manufacturers. The USAEC will question its own contractor-operators, as well as help finance the poll. (Although USAEC sales from Oak Ridge of bulk quantities of radioisotopes have shown steady increases, no definite sales figures of the processors are available. More than 100 commercial firms now buy radioisotopes in bulk, process them, and retail them to licensed industrial and research organizations.)

REACTOR LICENSES ISSUED:- Industrial Reactor Laboratories, Inc., has received USAEC license for limited operation of its 5,000 thermal kw pool type research reactor at the company's 300 acre site near Plainsboro, N.J. License for operation at full design power will be issued when containment vessel leak tests are completed... Lewis Flight Research Center, near Cleveland, Ohio, operated by National Aeronautics and Space Administration, is to receive USAEC license for a homogeneous zero power research reactor using uranyl fluoride-water solutions as fuel.

HEARINGS SCHEDULED FOR RADIOACTIVE WASTE BUSINESS:- Public hearings have been scheduled by the USAEC for Nov. 19, 1958 on Walker Trucking Co.'s application for a USAEC license to collect low-level radioactive wastes and dispose of them at sea. Walker, a New Britain, Conn. firm, had proposed a terminal near Portland, Conn., as a collection point to prepare materials for sea disposal and the board of selectmen of Portland had filed objections on the grounds that public safety would be endangered.

SUBSTANTIAL INVESTMENT MADE IN NUCLEAR MANUFACTURING FACILITIES:- Westinghouse Electric Co. has $20 million invested in facilities for nuclear research, development and manufacturing, according to Charles H. Weaver, vice president of Westinghouse for atomic power. Mr. Weaver said this investment will double within the next few years. He noted also that Westinghouse has signed a nuclear "know-how" licensing agreement with Societe Franco-Americaine d'Energie Atomique of France.

BIDS ASKED, CONTRACTS AWARDED...in the nuclear field...

BIDS ASKED:- Research and development contracts will be awarded by the USAEC under a new fuel cycle development program aimed at reducing nuclear fuel costs. Approaches will be through decreasing the cost of fuel element fabrication, chemical processing, and reprocessing. Also to be investigated will be fuel elements having increased burnup and capable of operating at higher temperatures. Commission assistance to companies may include the provision of hot cell facilities and irradiation space in test reactors and arrangements for obtaining space for operational use in commercial size nuclear power reactors. Interested companies are asked to notify Division of Reactor Development, USAEC, Wash. 25, D. C.

CONTRACTS AWARDED:- Contract recently awarded Beryllium Corp., Reading, Pa., by U. S. Air Force has as its objectives commercial method of producing ductile beryllium castings. At present, fabrication of beryllium is by powder metallurgy techniques; this is because production ingots of the metal cannot be worked by conventional methods. Air Force aims are to improve present metal casting methods and allow beryllium to be cast into shapes that may then be fabricated into rods, sheets, and bars. (Two study contracts on beryllium have been let by the Defense Department with Brush Beryllium Co; one, in the amount of $90,000 covers alloy development and the other, for $230,000 is for sheet-rolling the metal. There are also contracts with Martin Co. ($70,000) to investigate fabrication techniques, and with Alloyd Research Corp. ($79,000) to study ductility.)

Contract has been signed by the Governor General of the Belgian Congo with General Dynamics Corp. for shipment of a General Dynamics TRIGA nuclear research reactor to the University of Lovanium, Leopoldville. The reactor supplied will be the one which was shown at the U.S. Government commercial exhibit in Geneva of the 2nd International Atomic Energy Conference. The Geneva TRIGA, which operated during the conference at power levels up to 50 kw, can be operated intermittently at power levels up to 100 kw. (The reactor's self-controlling safety feature holds any power level rise to a safe level by the negative temperature coefficient of its fuel elements. This is accomplished by the use of new fuel-moderator elements. These elements are a solid homogeneous fuel-moderator alloy of uranium-zirconium hydride clad in aluminum.)

ATOMIC ENERGY PATENT DIGEST...

ISSUED October 14, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Device for con-

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- Model P21 surface moisture and Model P22 surface density probes provide moisture and density measurements directly on the surface of material. Surface measurements are made by placing the P21 probe, containing a fast neutron source, or the P22 probe, containing a gamma-ray source, on a relatively smooth portion of the surface of the material being examined. The radioactivity is scattered with varying degrees when placed in contact with materials of different density or moisture content, and measurement of the scatter with a scaler allows determination of moisture content or density.-- Nuclear-Chicago Corp., Chicago 10, Ill.

Model 1000 neutron generator is a portable, self-contained unit for general laboratory use, with remote control for flexibility and operating convenience. The unit does not require vacuum pumps, cooling water, or special services. Neutrons are generated in a small accelerator tube which is enclosed in a grounded, hermetically sealed cylindrical "can". In addition to this neutron source tube, necessary power supplies, in a mobile cabinet, and the remote control unit, make up the other main components.-- Schlumberger Well Surveying Corp., Ridgefield, Conn.

Linear amplifier, Model LA-100, is for use in conjunction with boron trifluoride counters in the starting-up of nuclear reactors; for use in checking radioisotopes; with proportional counters; etc. The amplifier has a gain of from 50 to 1600 in 6 switchable positions and is said to have a resolving time at 100 times overload of 10 microseconds.-- Gyra Electronics Corp., La Grange Park, Ill.

PRODUCT NEWS:- A filter paper manufactured of asbestos-vegetable fibers is offered by Gelman Instrument Co., Chelsea, Mich., for filtration of radioactive aerosols. The paper (type HV-70) is said to have low resistance and high efficiency; a silicone treatment makes it water repellent, so that it may be used to sample saturated air streams.

Disposal of radioactive wastes by embedding them in porcelain from which they cannot be leached out is being studied at Coors Porcelain, Golden, Colo. Coors is using the clay formulation as a sponge, soaking up the radioactive solution into the clay's pores. The clay is then fired, chemically bonding the radioelements (cesium-137, strontium-90, etc.) to it. Using pure clays, the fired porcelain has been tested at Los Alamos where some samples have shown 0.00 leachability in tests. A proposal has been submitted to the USAEC for funds to continue the work at Coors on a larger scale and try other approaches such as less pure, less expensive clays; various shapes such as bricks and spheres; varying the porosity of the mixtures; etc.

PROCESSES:- Experience at Hanford Plutonium Works in removing radioactive contamination from clothing shows that soaps, clays, silicates and other recognized commercial laundry materials are of little value for such work, according to E. C. Watson, Jr., of Hanford Laboratories, who described Hanford laundry procedure at recent USAEC "Symposium on Health Protection Criteria for Uranium Processing" held in New York last fortnight. He said that most effective agents for washing out radioactivity from clothing are compounded detergents containing glassy phosphate salts, carbonate and ammonium ions. Mr. Watson described the Hanford laundering job as one consisting of, per month, approximately 133,000 pounds of coveralls, 14,000 pounds of lab coats, 33,000 pounds of gloves, caps and shoe covers, and 100,000 pounds of rubber goods and masks.

RADIATION NEWS:- No significant increase has occurred in radioactive content of foodstuffs since nuclear work started in 1945, according to a two-year test of foods, the Association of Official Agricultural Chemists was told at its annual meeting in Washington last fortnight. The tests, made by the Food & Drug Administration, covered 1,000 samples of foods produced before 1945 and 100 samples produced after 1945. Greatest increase was found in dried tea leaves, with dairy products second, shellfish third, and other fish fourth. Very little increase was found in canned vegetables, and less in canned fruits. The FDA work was described by Edwin P. Laug, who made the study with Wendell C. Wallace.

Claiming that he had received radiation exposure of more than 1,000 roentgens during his professional career, Melvin Reinhard, a retired physicist has asked the New York State Workmens' Compensation Board to award him compensation. Now 61, Mr. Reinhard claims that his life was shortened five years because of the exposure during the course of cancer therapy studies at Roswell Park Memorial Institute, Buffalo, N.Y. (The exposure is 500% above the permissible exposure of the National Commission on Radiation Protection.)

ATOMIC ENERGY FINANCIAL NEWS...

ATOMIC ENERGY PATENT DIGEST...

ISSUED October 14, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Device for controlling insertion of rod. B. B. Beaty, inventor. No. 2,855,899 assigned to USAEC (2) Metal sprayer for use in vacuum or inert atmosphere. R. E. Monroe, inventor. No. 2,856,237 assigned to USAEC. (3) Iodate method for purifying plutonium. R. W. Stoughton, inventor. No. 2,856,261 assigned to USAEC. (4) Adsorption procedure in preparing uranium-233. R. W. Stoughton, inventor. No. 2,856,262 assigned to USAEC. (5) Process for recovery and purification of uranium deposits. J. M. Carter, inventor. No. 2,856,263 assigned to USAEC. (6) Neutronic reactor control. H. E. Metcalf, inventor. No. 2,856,336 assigned to USAEC. (7) Method of operating nuclear reactors. S. Untermyer, inventor. No. 2,856,337 assigned to USAEC. (8) Nuclear reactors. E. P. Wigner, G. J. Young, inventors. No. 2,856,339 assigned to USAEC. (9) Shaped fissionable metal bodies. E. P. Wigner, R. R. Williamson, G. J. Young, inventors. No. 2,856,340 assigned to USAEC. (10) Nuclear reactor slug provided with thermocouple. W. R. Kanne, inventor. No. 2,856,341 assigned to USAEC. (11) Separation process for transuranic element and compounds thereof. M. Calvin, inventor. No. 2,856,418 assigned to USAEC. (12) Inert gas shield for welding. S. O. Jones, F. V. Daly, inventors. No. 2,856,510 assigned to USAEC. (13) Gating circuits. L. C. Merrill, inventor. No. 2,856,526 assigned to USAEC. (14) Pulsed ion source. E. F. Martina, inventor. No. 2,856,532 assigned to USAEC.

ISSUED October 21, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Radioactive bore hole logging. S. B. Jones, inventor. No. 2,857,522 assigned to California Research Corp., San Francisco, Calif. (2) Apparatus for radioactive material. D. L. Tabern, R. H. Storey, inventors. No. 2,857,524 assigned to Abbott Laboratories, N. Chicago, Ill. (3) Protective clothing, covering shelter, etc., utilizing a lamination incorporating radioactive impervious metallic foil. William S. Ferdon, inventor. No. 2,857,525 issued to inventor of record.

ISSUED October 21, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Use of potassium lanthanum sulfate for forming carrier precipitate for plutonium values. A. H. Angerman, inventor. No. 2,857,241 assigned to USAEC. (2) Superconducting vanadium base alloy. H. J. Cleary, inventor. No. 2,857,268 assigned to USAEC. (3) High temperature refractory coating for graphite molds. S. D. Stoddard, inventor. No. 2,857,285 assigned to USAEC. (4) Engineering test reactor. D. R. de Boisblanc, M. E. Thomas, R. M. Jones, G. H. Hanson, J. W. Webster, C. F. Leyse, inventors. No. 2,857,324 assigned to USAEC. (5) Distributed amplifier incorporating feedback. P. R. Bell, inventor. No. 2,857,483 assigned to USAEC.

PATENT NEWS:- Now pending before the USAEC is claim by four scientists for compensation by the U. S. government for original work done by them in separation of uranium isotopes. The four men, Alfred Nier, dean of the School of Engineering, University of Minnesota; Eugene Booth, physics professor, Columbia University; John Dunning, dean of the School of Engineering, Columbia University; and Aristid Grosse, president, Temple University Research Institute, have set up the Basic Science Foundation to handle their claim. The Foundation will distribute the award (if any) for university research work, with an amount to be retained by the inventors.

PEOPLE...in nuclear work...

Carlos A. Benardes of Brazil has been elected chairman of the 23-member board of governors of the International Atomic Energy Agency for the coming year; election took place at recent meeting in Vienna of IAEA.

George Stern has joined Nuclear Development Corp. of America, White Plains, N.Y., as manager of the materials department. Mr. Stern is a specialist in high temperature treatment of metals and in powder metallurgy, and formerly was with American Sinsteel Corp.

Sam Wenk has joined the consulting staff of Applied Radiation Corp., Walnut Creek, Calif., and will work in the field of linear accelerator radiography. Mr. Wenk was formerly in charge of non-destructive testing research at Battelle Memorial Institute.

MEETINGS, COURSES, CONFERENCES...

MEETINGS:- Ernest O. Lawrence Memorial Lecture, which has been established by National Academy of Sciences in honor of the late Nobel Laureate and cyclotron inventor, will be delivered by William Nierenberg at the National Academy's forthcoming meeting Nov. 6-8, 1958, on the Berkeley campus of the University of California.

ATOMIC ENERGY FINANCIAL NEWS...

NUCLEAR PRODUCT FIRMS SHOW BETTER EARNINGS:- New highs in sales and earnings for its fiscal year ended Aug. 31, 1958 were established by Nuclear-Chicago Corp. Net sales were $3,851,078, an increase of $1,265,248 over the previous year. Net earnings were $442,252 as compared with $252,846 for the previous year, while net earnings per share were $1.41 for the current year against 81¢ for the like period last year. Shareholders have been asked to vote on proposal to increase authorized capital stock of the company from 400,000 shares to 1,500,000 shares; the company feels this would provide greater flexibility for future needs. (The company's new 52,000 square foot building, now being constructed on a site northwest of Chicago, is being financed principally by means of a long-term unsecured loan.)

Latest quarterly report of Tracerlab, Inc., to shareholders, shows a net profit of $7,000 on operations for the third quarter of 1958. This makes a total of four profitable months and one complete quarter out of the first nine months of 1958. Operations in the black have followed a period of unprofitable months for this manufacturer of apparatus for the nuclear and x-ray trades.

MERGER OF URANIUM MINING & MILLING FIRMS PROPOSED:- Permission for merger of four uranium firms into its subsidiary Hidden Splendor Mining Co. has been asked of the SEC by Atlas Corp., closed-end investment company. Atlas owns all of the 2,400,000 outstanding common shares of Hidden Splendor and all of the company's $14,087,517 promissory notes. Hidden Splendor would be the surviving company in the merger. The other companies are Lisbon Uranium Corp.; Radium King Mines, Inc.; Mountain Mesa Uranium Corp.; and Rio De Oro Uranium Mines, Inc. Hearing is scheduled for Nov. 18 by the SEC on the merger proposal.

NEW GROUP IN CONTROL OF SUSQUEHANNA CORPORATION:- New group headed by J. Patrick Lannan, Chicago investment broker, has apparently won control of Susquehanna Corp. Mr. Lannan was made president and chief executive officer of the firm following meeting of Susquehanna's directors last week. Previous management of Susquehanna, headed by Charles S. Leonard, now resigned, had conducted negotiations and were ready to buy Vitro Minerals Corp. Vitro Minerals is a uranium mining and milling concern jointly owned by Vitro Corp. of America and Rochester & Pittsburgh Coal Co. The proposal had been opposed by a stockholders' group headed by Mr. Lannan, with the sale called off by Vitro's owners and the ensuing proxy fight resulted in old management being ousted.

RESEARCH PROJECTS...in the nuclear field...

NEW TECHNIQUE MAY INCREASE RESEARCH CAPACITY FOR REACTORS:- Use of new neutron-diffraction technique and apparatus, spark counters for neutron image intensifying, may give increased research capacity for reactors according to Leonard Reiffel, manager of physics department, Armour Research Foundation, Chicago. Equipment and methods using spark counters, which enable very-high-speed neutron image photography, were developed at physics research department of Armour. Dr. Reiffel points out that the spark counter is much more efficient in using neutron discharge than former equipment, and costs much less than present diffraction equipment used on biggest U. S. research reactors.

NEW GRANT FOR RESEARCH REACTOR:- Grant of $425,000 will be made to University of Buffalo by National Science Foundation for the University's 100 kw research reactor. Local industry and the National Institute of Health are contributing the balance of the initial cost of $1,050,000. Work is expected to get underway in three or four months with the reactor in operation by 1960.

REACTOR GOES CRITICAL:- First of the two nuclear reactors of the land based prototype power plant for large naval surface ships achieved criticality last fortnight. The plant, designed and developed by Westinghouse Electric Corp., at the Bettis Plant, Pittsburgh, Pa., under USAEC contract, is located at the naval reactor facility of the national reactor testing station, near Idaho Falls, Idaho. It is the prototype for two of the Navy's nuclear powered ships now under construction: the guided missile cruiser USS Long Beach, being built by Bethlehem Shipbuilding Co., Quincy, Mass., and the aircraft carrier USS Enterprise, being built by Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

October 28, 1958